Inlays and Onlays — When a Filling Isn't Enough

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Description:

Discover dental inlays and onlays — durable restorations for when a filling is not enough but a crown is not yet needed. Materials, procedure, and benefits.

Details:

Collins Street Specialist Centre — Inlays and Onlays: When a Filling Isn't Enough

When a tooth has sustained moderate damage — beyond what a direct filling can reliably restore, but not so extensive that it needs a full crown — inlays and onlays are often the most sensible clinical choice. Sometimes called indirect fillings or partial crowns, these custom-fabricated restorations preserve significantly more natural tooth structure than a crown while lasting longer and holding up better than a conventional direct filling.

At Collins Street Specialist Centre (CSSC), general dentists, cosmetic dentists, and prosthodontists work together to determine the right restoration for each situation, balancing aesthetics, function, and long-term durability.

What are inlays and onlays?

An **inlay** is a custom-made restoration that sits within the cusps on the chewing surface of a posterior tooth. Think of it as a precisely fabricated filling built outside the mouth in a dental laboratory, then bonded into the prepared cavity.

An **onlay** works on the same principle but extends over one or more cusps. Because it covers more of the tooth surface, an onlay provides additional structural support — which is why they're sometimes described as partial crowns.

Both are fabricated to the exact dimensions of the prepared cavity, so they seat with exceptional precision. That close fit creates a tight seal that limits bacterial ingress beneath the restoration, reducing the risk of recurrent decay.

How do inlays and onlays compare to fillings and crowns?

Fillings

Direct fillings — composite resin or amalgam — are placed and shaped chairside in a single appointment. They work well for small to moderate cavities. But when a cavity is large, particularly when a significant portion of the chewing surface is involved, a direct filling may not hold up structurally over time. Large direct restorations can flex under biting forces, which can eventually lead to fracture of the restoration or the remaining tooth.

Crowns

A full crown covers the entire visible portion of the tooth above the gum line. Crowns are the right call for heavily damaged or structurally compromised teeth, but preparing a tooth for a crown means

removing a substantial amount of healthy structure from all sides. Where a tooth still has considerable sound structure despite moderate damage, a crown can be more intervention than the situation actually warrants.

Inlays and onlays

Inlays and onlays sit between those two options. They deliver the strength and durability of a laboratory-fabricated restoration while preserving far more natural tooth structure than a crown preparation requires. Their custom fit also provides excellent marginal adaptation — the quality of the seal between restoration and tooth — which contributes to longevity and reduces the risk of secondary decay.

Materials

Inlays and onlays can be made from several materials, each with different clinical and aesthetic trade-offs. Your dentist will discuss what makes sense based on the tooth's location, the extent of damage, aesthetic priorities, and your preferences.

Porcelain (ceramic)

Porcelain is the most popular choice for patients who want a restoration that looks like a natural tooth. Modern dental ceramics can be colour-matched and characterised to mimic the translucency and shade variation of natural enamel. Porcelain is biocompatible, stain-resistant, and produces excellent aesthetic results.

It performs well under compressive biting forces, though it can be more brittle than some alternatives. Your dentist will factor in the functional demands on the tooth before recommending porcelain.

Composite resin

Laboratory-fabricated composite resin inlays and onlays offer good aesthetics and can be shade-matched to your natural teeth. They're generally more affordable than porcelain and durable enough for moderate-sized restorations. Composite resin also wears at a rate similar to natural enamel, which reduces the risk of excessive wear on the opposing tooth.

Gold

Gold inlays and onlays have been used in restorative dentistry for over a century, and they remain an excellent option — particularly for posterior teeth where appearance is less of a priority. Gold is exceptionally durable, biocompatible, and gentle on opposing teeth. It also requires the most conservative tooth reduction of any inlay or onlay material during preparation.

Gold restorations aren't tooth-coloured, but many patients value their reliability above all else. With proper care, they can last 20 to 30 years or more.

Zirconia

Zirconia has become increasingly popular because it combines high strength with acceptable aesthetics. It's particularly well-suited to onlays in areas subject to heavy biting forces. Modern zirconia can be layered or characterised to look natural, though it may not fully replicate the optical translucency of feldspathic porcelain in every situation.

The procedure — what to expect

Traditional two-visit approach

First visit — preparation and impressions

Your dentist administers local anaesthetic before removing any existing decay and failing restorative material. The tooth is then shaped to create a clean, well-defined preparation that will accurately

accommodate the inlay or onlay. A detailed impression is taken — either with conventional impression material or a digital intraoral scanner — and sent to a dental laboratory, where a ceramist or technician fabricates your custom restoration.

A temporary filling or provisional restoration is placed to protect the tooth in the meantime.

Second visit — fitting and bonding

Once the laboratory has completed your restoration — typically within one to two weeks — you return for the fitting. The temporary is removed, and the inlay or onlay is trialled in place to check fit, bite, and shade match. Once everything looks right, the restoration is permanently bonded using a dental adhesive resin. The margins are finished and polished for a smooth, comfortable result.

CAD/CAM single-visit option

Digital dentistry has made it possible to design and mill certain inlays and onlays chairside in a single appointment using CAD/CAM (Computer-Aided Design / Computer-Aided Manufacturing) technology.

The process involves scanning the prepared tooth with a digital intraoral camera, designing the restoration in software, and milling it from a ceramic block using an in-office milling unit. From preparation through to bonding, the whole process takes roughly 90 minutes to two hours.

The practical advantage is obvious — one visit, no temporary restoration. That said, laboratory-fabricated restorations can offer more material options, better layered aesthetic characterisation, and more precise shade matching in complex cases. Your dentist will advise which approach suits your situation.

When are inlays and onlays recommended?

Your dentist may recommend an inlay or onlay in these circumstances:

- **Moderate to large cavities** in posterior teeth where a direct filling may not provide adequate long-term structural support - **Replacement of large, failing restorations** — when an existing amalgam or composite filling needs replacing and the remaining tooth structure would benefit from something stronger and more durable - **Cracked or fractured teeth** — where the damage is beyond what a direct filling can reliably address, but a full crown isn't yet clinically indicated - **Structurally weakened teeth** — an onlay can provide meaningful support to a tooth that has lost integrity through decay or previous restorative work - **Aesthetic improvement** — replacing dark amalgam restorations with tooth-coloured porcelain or composite inlays for a more natural appearance

Longevity and care

Inlays and onlays are among the most durable restorations available. Porcelain and composite restorations typically last 10 to 20 years; gold restorations can last considerably longer — 20 to 30 years or more with proper care.

To get the most out of your restoration:

- **Brush twice daily and floss carefully** around the restored tooth to reduce the risk of recurrent decay at the margins - **Keep up with regular dental check-ups** — your dentist will monitor the restoration and surrounding tooth structure at each visit - **Wear a night guard if you grind your teeth** — bruxism places significant load on all restorations and can accelerate wear or cause fracture - **Avoid habits that stress your teeth** — chewing ice, biting fingernails, or using your teeth as tools

The CSSC advantage — multidisciplinary expertise

At Collins Street Specialist Centre, the decision about which restoration is right for your tooth is informed by genuine specialist input. General and cosmetic dentists work alongside prosthodontists — specialists whose practice centres on restoring and replacing teeth — to ensure every treatment plan

accounts for long-term tooth health and function.

For complex cases involving multiple teeth or full-mouth rehabilitation, prosthodontists take a lead role in treatment planning. For more straightforward presentations, general dentists provide excellent restorative care using the same high-quality materials and evidence-based techniques.

With over 25 specialists and 80 clinicians practising under one roof at the Manchester Unity Building, patients have access to a depth of clinical expertise that's genuinely uncommon within a single dental practice.

Frequently asked questions

Is the procedure uncomfortable? No. It's carried out under local anaesthetic, and most patients find it very comfortable — broadly comparable to having a standard filling placed.

How long does each appointment take? For the traditional two-visit approach, each appointment typically takes 45 to 60 minutes. For CAD/CAM single-visit restorations, allow approximately 90 minutes to two hours.

Are inlays and onlays covered by private health insurance? Many private health insurance policies include inlays and onlays under major dental or restorative dental benefits, but coverage varies considerably between funds and levels of cover. It's worth confirming your entitlements with your insurer before starting treatment.

Can an inlay or onlay become dislodged? Contemporary bonding techniques create a strong adhesive bond between the restoration and the tooth. Debonding is uncommon, but it can occasionally happen — particularly after unusual or excessive biting forces. If it does, contact your dentist promptly; the restoration can generally be re-bonded without difficulty.

What if my tooth needs more than an onlay can provide? If the damage exceeds what an onlay can adequately address, a full crown may be the appropriate next step. Your dentist will assess this during your examination and explain all available options clearly, so you can make an informed decision.

Book your consultation at CSSC

If you have a damaged or heavily restored tooth and want to understand your options, book a consultation at Collins Street Specialist Centre. The clinical team will assess your tooth thoroughly, explain what's available in plain terms, and recommend the approach that best serves your dental health.

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